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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,183	02/13/2003	Takehiko Kitamori	2002-0252A	7634
513	7590	05/31/2005	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			FINEMAN, LEE A	
2033 K STREET N. W.				
SUITE 800			ART UNIT	
WASHINGTON, DC 20006-1021			2872	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/069,183

Applicant(s)

KITAMORI ET AL.

Examiner

Lee Fineman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/22/02 & 3/8/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This Office Action is in response to an amendment filed 8 March 2005 in which claims 1-6 were cancelled and claims 7-13 were added. Claims 7-13 are pending.

#### ***Drawings***

1. A new drawing fig. 3 was received on 8 March 2005. This drawing is acceptable.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opsal, US 5,074,669 in view of Hiraga et al., WO99/08149 and Power, US 5,365,065 or Prekel et al. US 5,760,400.

Regarding claims 1 and 11, Opsal discloses in fig. 2 a desktop thermal lens microscope apparatus, comprising a laser (20) forming an excitation light source operable to emit excitation light; a chopper (24) positioned to modulate the excitation light when emitted from said excitation light source (fig.2); a beam expander (26) that enables collimation adjustment in a direction of a light path of the excitation light and biaxial centering in a direction perpendicular to the excitation light path so as to be able to emit the modulated excitation light as plane waves in use; another laser (60) forming a probe light source operable to emit probe light; a microscope

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optical system (36, 40, 50, 52, 54) operable to receive the modulated excitation light as plane waves and the probe light, said microscope optical system comprising an objective lens system (40) and having a stage (50, 52, 54) for receiving a specimen (42) thereon, wherein the modulated excitation light and the probe light can be passed through said objective lens system and into said stage such that a thermal lens is formed by irradiation of the excitation light into the specimen on said stage (fig. 2 and column 5, lines 19-21), wherein the probe light can be passed through the thermal lens and detection (with 80) of substances in the specimen can be performed by measuring diffusion of the probe light resulting from action of the thermal lens by an optical axis of the probe light being adjusted by the thermal lens (column 5, lines 13-32); a light receiving system (66, 84, 80) positioned to receive the modulated excitation light and the probe light that has passed through the thermal lens (fig. 2), wherein a measuring part thereof is operable to measure adjustment of the optical axis of the probe light (fig. 2 and column 5, lines 19-21). Opsal discloses the claimed invention except for the lasers being semiconductor lasers; including a collimator lens positioned to emit the probe light as parallel light-ray beams when the probe light is emitted from said probe light source; and a single housing, wherein said excitation light source, said probe light source, said chopper, said beam expander, said collimator lens, said microscope optical system, and said light receiving system are integrated together in said single housing. Hiraga et al. teach a thermal lens microscope system (fig. 1) which includes a probe laser (2) and an excitation laser (1) and further teach that gas lasers, solid-state lasers, dye lasers and semiconductor lasers are art-recognized equivalents for providing a light source (page 25, lines 11-24, see English Translation in US 6452710, column 17, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any of the

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above lasers including semiconductor lasers as claimed in the system of Opsal as reliable, commonly available light source for the system. Hiraga et al. further teach wherein a collimator lens (not shown) positioned to emit the probe light as parallel light-ray beams when the probe light is emitted from said probe light source (see fig. 1 and page 25, lines 25-29, see English Translation in US 6452710, column 17, lines 60-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a collimator lens as suggested by Hiraga et al. to the system of Hiraga et al. to provide a consistent, known diameter beam into the system. Finally, thermal lens systems that are integrated into a single housing, i.e. connected together by means of a structure, are very well known in the art for providing a more stable system which prevents accidental misalignment of the elements. For example, Power or Prekel et al. both teach thermal lens systems that integrate light sources choppers, beam expanders, lenses and light receiving systems (fig. 1, Power and fig. 2, Prekel). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate all the elements of Opsal in view of Hiraga et al. as set forth above to provide a more stable system which prevents accidental misalignment of the elements.

Regarding claim 12, Opsal further discloses a filter (84) for which the probe light and the excitation light are separated from each other to thereby extract only the probe light alone. Opsal discloses the claimed invention except for explicitly stating the filter is a diffraction grating. Hiraga et al. further teach the thermal lens microscope system (fig. 1) which includes a filter (20) which separates the probe light and the excitation light from each other to thereby extract only the probe light alone (page 28, lines 13-16) and further teaches that the filter, a prism, diffraction grating or dichroic mirror are art-recognized equivalents for filtering specific wavelengths (page

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28, lines 17-18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any of the above filters, including a diffraction grating, in the system of Opsal to filter out a specific wavelength.

Regarding claims 10 and 13, Opsal further discloses a method for performing a chemical analysis, comprising performing a chemical analysis (column 7, lines 23-44) of a very small quantity in a micro spatial region on a chip (42).

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opsal in view of Hiraga et al. and Power or Prekel et al., as applied to claims 7 and 10 above, and further in view of Morris et al., US 4,591,272.

Opsal in view of Hiraga et al. and Power or Prekel et al., as applied to claims 7 and 10 above disclose the claimed invention except for explicitly stating that said chopper is operable to perform lock-in amplifier signal processing with a modulation mechanism that performs phase-locked loop (PLL) control of the drive of the chopper and thereby performs modulation of the excitation light. Morris et al. teach disclose a desktop thermal lens microscope apparatus (fig. 1) including a chopper (24) that is operable to perform lock-in amplifier signal processing with a modulation mechanism (not shown) that performs PLL control of the drive of the chopper and thereby performs modulation of the excitation light (column 4, lines 18-25 and lines 49-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the chopper of Opsal in view of Hiraga et al. and Power or Prekel et al. perform lock-in amplifier signal processing and PLL control as suggested by Morris et al. to provide more effective modulation control.

***Response to Arguments***

5. Applicant's arguments with respect to claims 7-13 have been considered but are moot in view of the new ground(s) of rejection.

6. It is noted by the Examiner that the objections to the specification, claims and drawings made in the previous Office Action have been withdrawn due to amendment by the Applicant.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
LAF

May 27, 2005

  
MARK A. ROBINSON  
PRIMARY EXAMINER



**Fig. 3**

